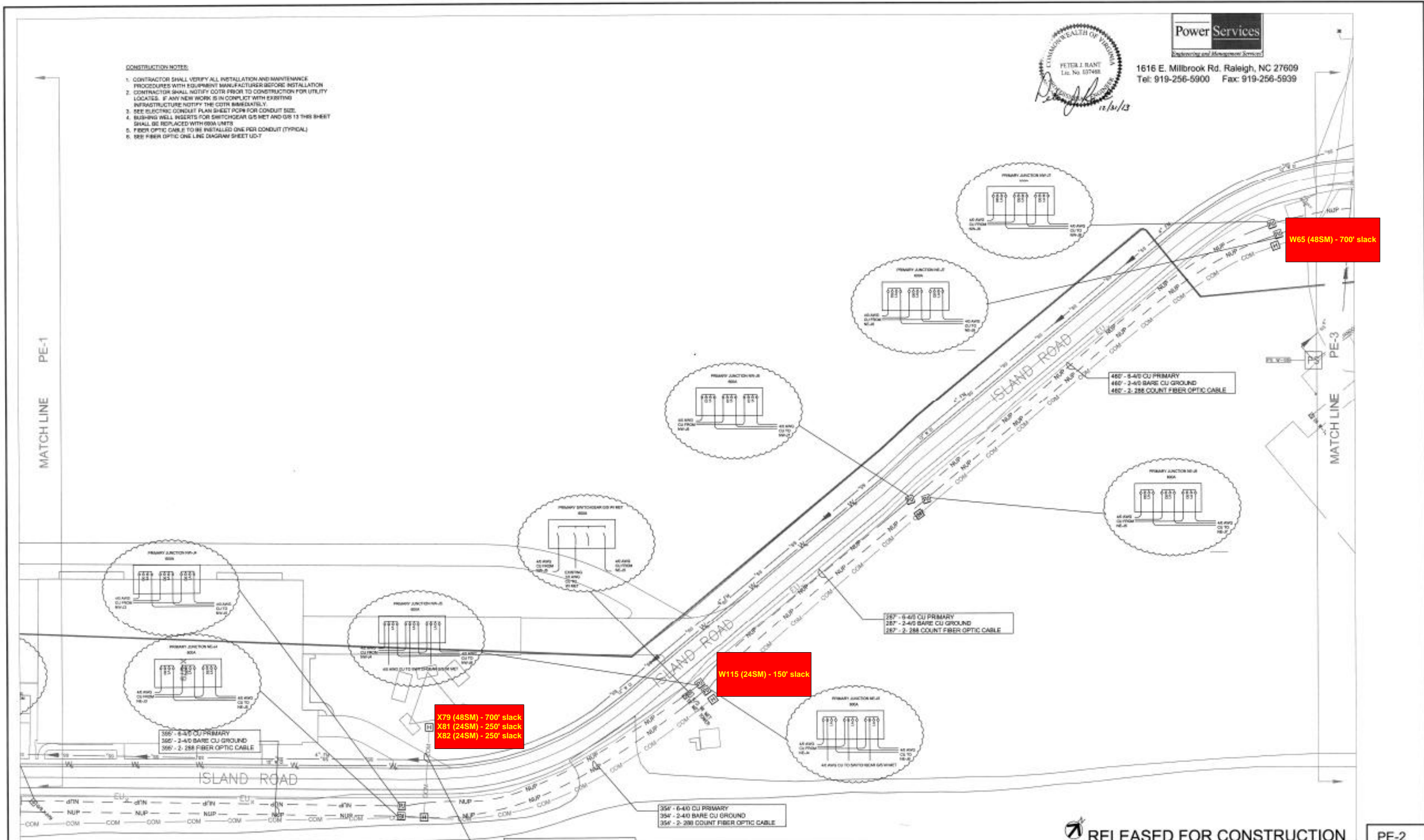


**CONSTRUCTION NOTES:**

1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE PROCEDURES WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION.
2. CONTRACTOR SHALL NOTIFY COTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATES. IF ANY NEW WORK IS IN CONFLICT WITH EXISTING INFRASTRUCTURE NOTIFY THE COTR IMMEDIATELY.
3. SEE ELECTRIC CONDUIT PLAN SHEET PCP-1 FOR CONDUIT SIZE.
4. BUSHING WELL INSERTS FOR SWITCHGEAR G-5 MET AND G-5 13 THIS SHEET SHALL BE REPLACED WITH G-5M UNITS.
5. FIBER OPTIC CABLE TO BE INSTALLED ONE PER CONDUIT (TYPICAL).
6. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET UD-7.



1616 E. Millbrook Rd. Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5939



**RELEASED FOR CONSTRUCTION**

**PE-2**

|  |   |      |     |           |    |    |                  |      |                 |      |                         |      |                      |      |  |  |  |  |
|--|---|------|-----|-----------|----|----|------------------|------|-----------------|------|-------------------------|------|----------------------|------|--|--|--|--|
| NATIONAL AERONAUTICS AND SPACE ADMINISTRATION<br>OUTSTANDING LIGHT CENTER<br>WALLINGFORD FACILITY<br>WALLINGFORD, VIRGINIA 23357 |  | DATE | LET | REVISIONS | OK | AP | PROJECT ENGINEER | DATE | PROJECT SAFETY  | DATE | CONSTRUCTION MANAGEMENT | DATE | ENGINEERING APPROVAL | DATE | <br>NORTH ISLAND ELECTRICAL UPGRADE<br>PRIMARY AND SECONDARY CABLE PLAN | AUTOCAD — RELEASE 2007<br>FILE NAME: 16886.dwg<br>SCALE: 1"=40'<br>SHEET: 29 OF 35 | PROJECT NUMBER: NISA-0180<br>DATE: 12-01-2013<br>DRAWING NO: 16886 |  |
|  |   |      |     |           |    |    |                  |      |                 |      |                         |      |                      |      |  |  |  |  |
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|  |   |      |     |           |    |    | SUBMITTED BY     | DATE | FIRE PROTECTION | DATE | D W M                   | DATE | BRANCH APPROVAL      | DATE |  |  |  |  |
|  |   |      |     |           |    |    | PROJECT MANAGER  | DATE |                 | DATE |                         | DATE | BRANCH HEAD          | DATE |  |  |  |  |

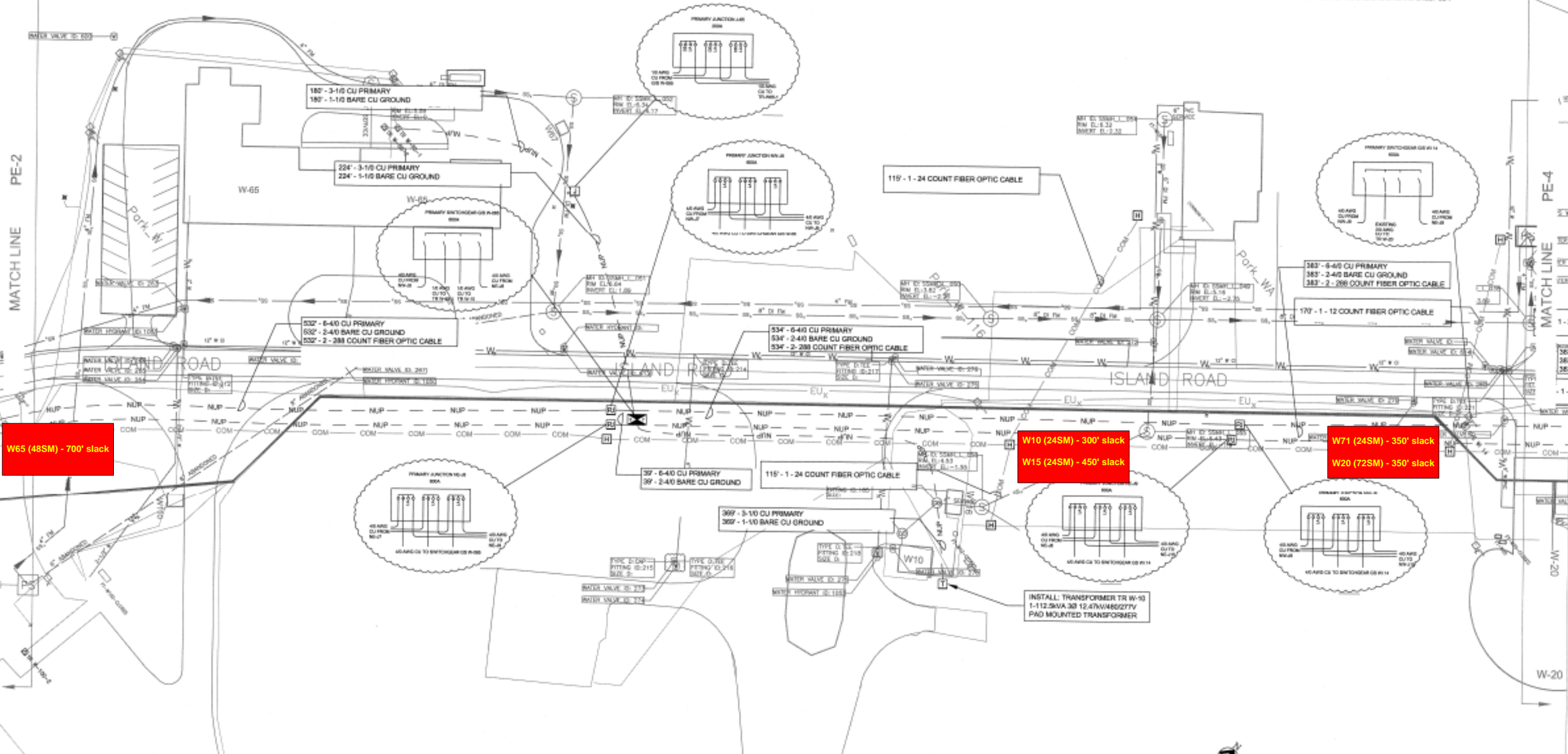
LAUNCH AREA BY-PASS ROAD



1616 E. Millbrook Rd. Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5939

**CONSTRUCTION NOTES**

1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE PROCEDURES WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION.
2. CONTRACTOR SHALL NOTIFY COTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATES. IF ANY NEW WORK IS IN CONFLICT WITH EXISTING INFRASTRUCTURE NOTIFY THE COTR IMMEDIATELY.
3. SEE ELECTRICAL CONDUIT PLAN SHEET FOR CONDUIT NOTE.
4. BUSHING WILL BE INSTALLED FOR SWITCHGEAR GROUNDING SHALL BE REPLACED WITH 600A UNITS.
5. FIBER OPTIC CABLE TO BE INSTALLED ONE PER CONDUIT (TYPICAL).
6. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET LD-7.



W65 (48SM) - 700' slack

W10 (24SM) - 300' slack  
W15 (24SM) - 450' slack

W71 (24SM) - 350' slack  
W20 (72SM) - 350' slack



**RELEASED FOR CONSTRUCTION**

PE-3

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GODDARD SPACE FLIGHT CENTER  
Wallops Flight Facility  
Wallops Island, Virginia 22357



| DATE | LET. | REVISIONS | CK. | AP. |
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| PROJECT ENGINEER | DATE : _____ |
| SUBMITTED BY     | DATE : _____ |
| PROJECT MANAGER  | DATE : _____ |

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| NASA SAFETY     | DATE : _____ |
| FIRE PROTECTION | DATE : _____ |
|                 | DATE : _____ |

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| CONSTRUCTION MANAGEMENT | DATE : _____ |
|                         | DATE : _____ |
|                         | DATE : _____ |

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| ENGINEERING APPROVAL     | DATE : _____ |
| ENGINEERING GROUP LEADER | DATE : _____ |
| BRANCH APPROVAL          | DATE : _____ |
| BRANCH HEAD              | DATE : _____ |

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| GRAPHIC SCALE          | 1" = 40'          |
| AUTOCAD - RELEASE 2007 | FILE NAME: XXXXXX |
| SCALE                  | T=47              |
| SHEET                  | 30 OF 30          |

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|---|-------------------|
| NORTH ISLAND ELECTRICAL UPGRADE<br>PRIMARY AND SECONDARY CABLE PLAN |                   |
| PROJECT NUMBER: NASS-01080  | DRAWING NO. 16887 |
| DATE: 12-31-2012  | REVISION:         |

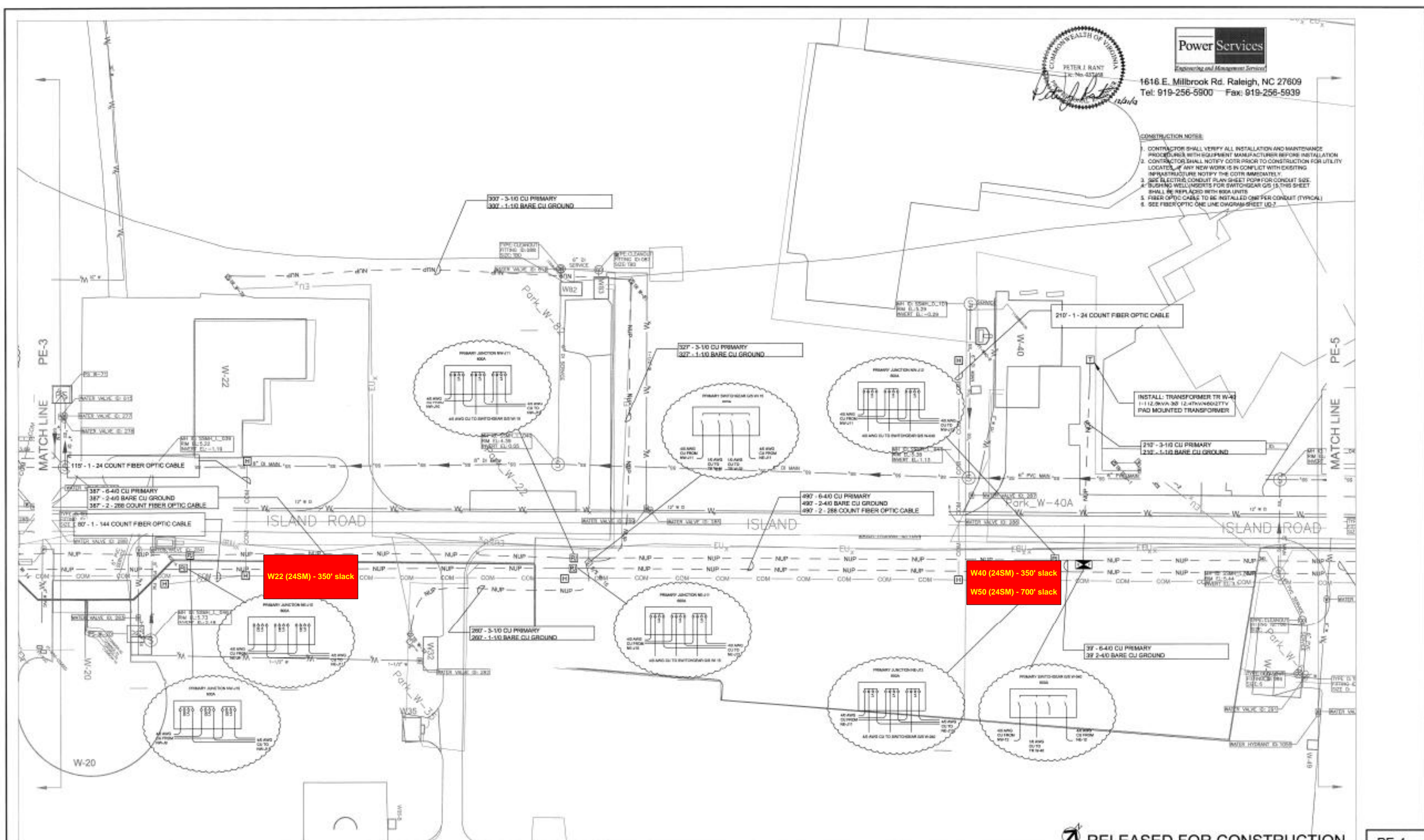




1616 E. Millbrook Rd. Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5939

CONSTRUCTION NOTES

1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE REQUIREMENTS WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION.
2. CONTRACTOR SHALL NOTIFY COTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATIONS. IF ANY NEW WORK IS IN CONFLICT WITH EXISTING INFRASTRUCTURE NOTIFY THE COTR IMMEDIATELY.
3. SEE BLOTTER CONDUIT PLAIN SHEET FOR CONDUIT SIZE.
4. BUSHING WELL INSERTS FOR SWITCHGEAR GDS IS THIS SHEET SHALL BE REPLACED WITH 800A UNITS.
5. FIBER OPTIC CABLES TO BE INSTALLED ONE PER CONDUIT (TYPICAL).
6. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET 10-7.



RELEASED FOR CONSTRUCTION

PE 4

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GODDARD SPACE FLIGHT CENTER  
Wallops Flight Facility  
Wallops Island, Virginia 22337



| DATE | BY | CHK | APP |
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| SUBMITTED BY     | DATE |
| PROJECT MANAGER  | DATE |

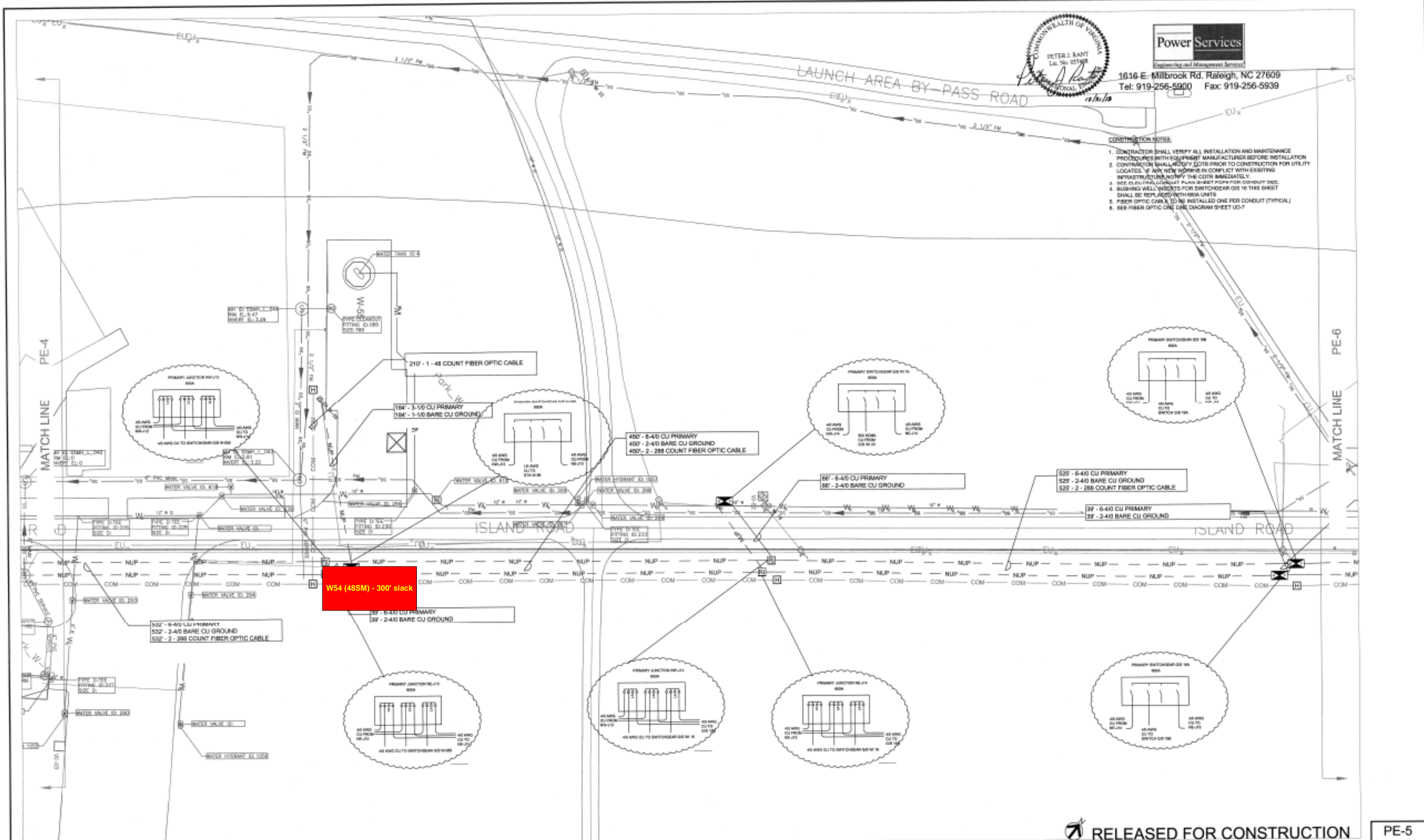
|                 |      |
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| RISK SHEET      | DATE |
| FIRE PROTECTION | DATE |

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| CONSTRUCTION MANAGEMENT | DATE |
| D & M                   | DATE |

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| ENGINEERING APPROVAL     | DATE |
| ENGINEERING GROUP LEADER | DATE |
| BRANCH APPROVAL          | DATE |
| ISSUED HEAD              | DATE |

|                        |                |
|------------------------|----------------|
| GRAPHIC SCALE          | SCALE          |
| AUTOCAD - RELEASE 2007 | 1"=40'         |
| FILE NAME: XXXXX       | SHEET 31 OF 36 |

|   |                   |
|---|-------------------|
| NORTH ISLAND ELECTRICAL UPGRADE<br>PRIMARY AND SECONDARY CABLE PLAN |                   |
| PROJECT NUMBER: NIS-01000   | DRAWING NO. 16888 |
| DATE: 12-01-2012  | REVISION:         |



1616 E. Millbrook Rd. Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5939

- CONSTRUCTION NOTES:**
1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE PROCEDURES WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION.
  2. CONTRACTOR SHALL NOTIFY ECTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATIONS. IF ANY NEW WORKS IN CONFLICT WITH EXISTING INFRASTRUCTURE, NOTIFY THE ECTR IMMEDIATELY.
  3. SEE ELECTRICAL CONDUIT PLAN SHEET FOR CONDUIT SIZE.
  4. BUSHING WELL VENTS FOR SWITCHGEAR ORS 16 THIS SHEET SHALL BE REPLACED WITH 68A UNITS.
  5. FIBER OPTIC CABLE TO BE INSTALLED ONE PER CONDUIT (TYPICAL).
  6. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET UD-7.

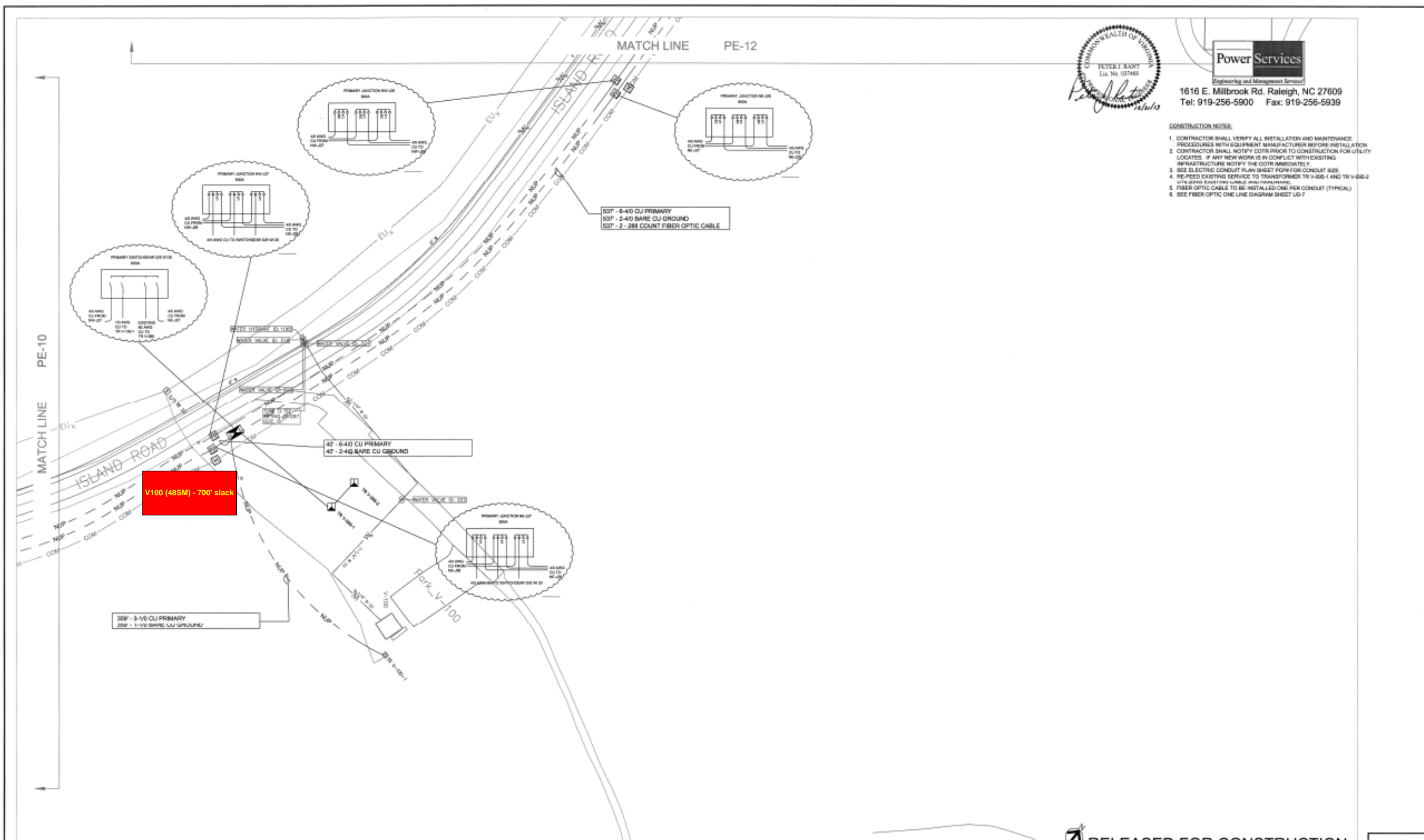
**RELEASED FOR CONSTRUCTION**

**PE-5**

|   |   |      |      |           |     |     |                  |                 |                         |                      |   |   |  |  |  |
|---|---|------|------|-----------|-----|-----|------------------|-----------------|-------------------------|----------------------|---|---|--|--|--|
| NATIONAL AERONAUTICS AND SPACE ADMINISTRATION<br>GODDARD SPACE FLIGHT CENTER<br>Wallops Flight Facility<br>Wallops Island, Virginia 23337 |  | DATE | LET. | REVISIONS | CK. | AP. | PROJECT ENGINEER | NASA SAFETY     | CONSTRUCTION MANAGEMENT | ENGINEERING APPROVAL | <br>AUTOCAD - RELEASE 2007<br>FILE NAME: XXXXX | NORTH ISLAND ELECTRICAL UPGRADE<br>PRIMARY AND SECONDARY CABLE PLAN | PROJECT NUMBER: NAS-01000<br>DRAWING NO. 16889 |  |  |
|   |   |      |      |           |     |     |                  |                 |                         |                      |   |   |  |  |  |
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|   |   |      |      |           |     |     | SUBMITTED BY     | FIRE PROTECTION | O & M                   | BRANCH APPROVAL      | SCALE<br>1"=40'   |   |  |  |  |
|   |   |      |      |           |     |     | PROJECT MANAGER  |                 |                         | BRANCH HEAD          | SHEET 32 OF 34  |   |  |  |  |







1616 E. Millbrook Rd. Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5939

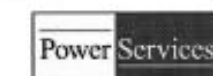
- CONSTRUCTION NOTES:**
1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE PROCEDURES WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION.
  2. CONTRACTOR SHALL NOTIFY COTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATES. IF ANY NEW WORK IS IN CONFLICT WITH EXISTING INFRASTRUCTURE NOTIFY THE COTR IMMEDIATELY.
  3. SEE ELECTRIC CONDUIT PLAN SHEET POP-1 FOR CONDUIT SIZES.
  4. RE-FEED EXISTING SERVICE TO TRANSFORMER TR-V-005-1 AND TR-V-005-2.
  5. FIBER OPTIC CABLE TO BE INSTALLED ONE PER CONDUIT (TYPICAL).
  6. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET UD-7.

**RELEASED FOR CONSTRUCTION**

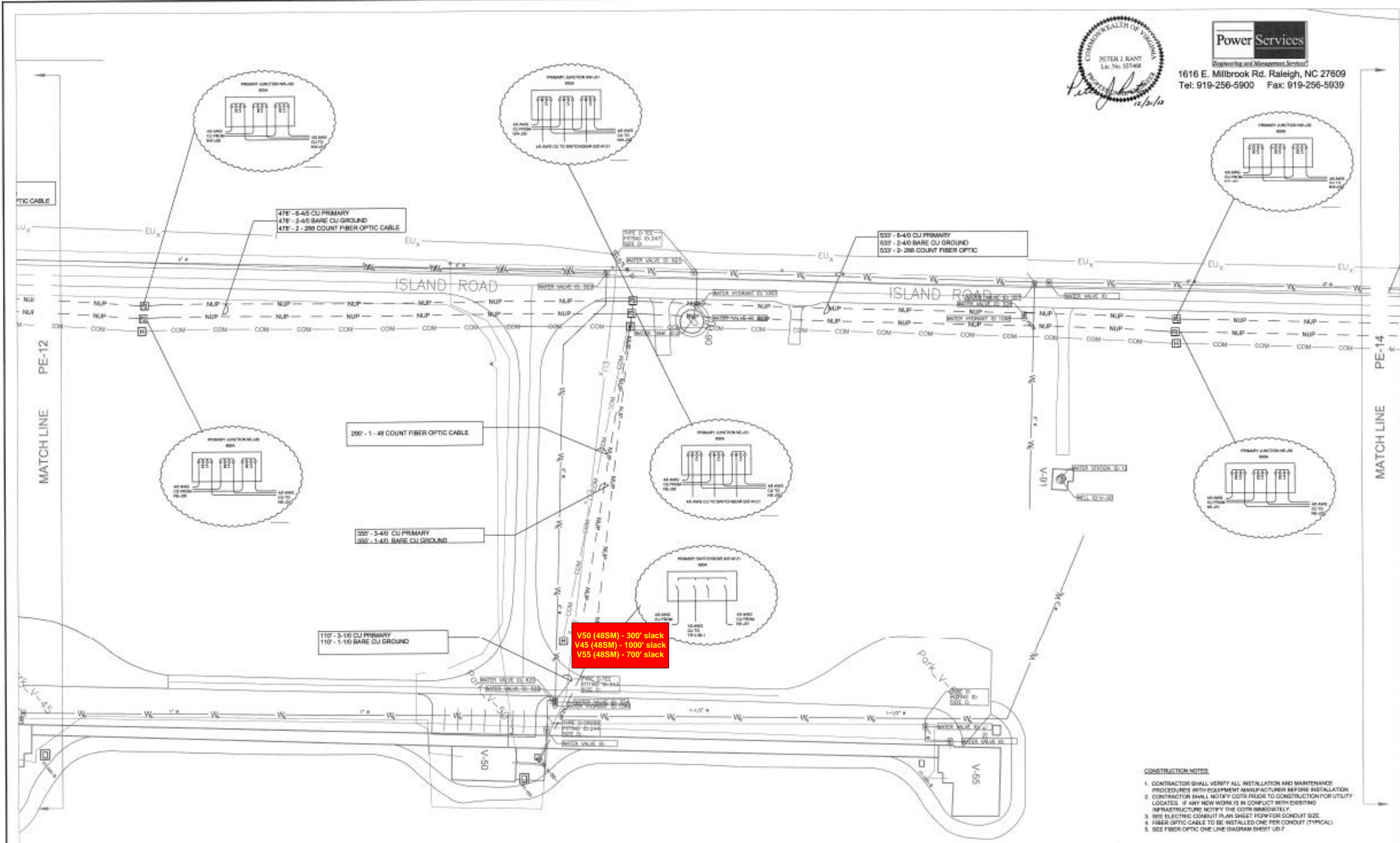
PE-11

|   |   |      |      |           |     |     |                  |              |                         |                      |  |                 |  |                      |
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| NATIONAL AERONAUTICS AND SPACE ADMINISTRATION<br>GODDARD SPACE FLIGHT CENTER<br>Wallops Flight Facility<br>Wallops Island, Virginia 23337 |  | DATE | LET. | REVISIONS | CR. | AP. | PROJECT ENGINEER | NASA SAFETY  | CONSTRUCTION MANAGEMENT | ENGINEERING APPROVAL | <br>NORTH ISLAND ELECTRICAL UPGRADE<br>PRIMARY AND SECONDARY CABLE PLAN |                 |  |                      |
|   |   |      |      |           |     |     |                  | DATE : _____ | DATE : _____            | DATE : _____         |  | DATE : _____    |  |                      |
|   |   |      |      |           |     |     |                  | SUBMITTED BY | FIRE PROTECTION         | D & M                |  | BRANCH APPROVAL |  |                      |
|   |   |      |      |           |     |     |                  | DATE : _____ | DATE : _____            | DATE : _____         |  | DATE : _____    |  |                      |
|   |   |      |      |           |     |     | PROJECT MANAGER  |              |                         | BRANCH TEST          | AUTOCAD - RELEASE 2007<br>FILE NAME: XXXXX   | SCALE<br>1"=40' | PROJECT NUMBER: NASS-01080<br>DATE: 12-31-2013 | DRAWING NO.<br>16895 |





1616 E. Millbrook Rd. Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5939



- CONSTRUCTION NOTES**
1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE PROCEDURES WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION.
  2. CONTRACTOR SHALL NOTIFY COTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATES. IF ANY NEW WORK IS IN CONFLICT WITH EXISTING INFRASTRUCTURE NOTIFY THE COTR IMMEDIATELY.
  3. SEE ELECTRIC CONDUIT PLAN SHEET FOR CONDUIT SIZE.
  4. FIBER OPTIC CABLE TO BE INSTALLED ONE PER CONDUIT (TYPICAL).
  5. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET U-7.

**RELEASED FOR CONSTRUCTION**

**PE-13**

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GODDARD SPACE FLIGHT CENTER  
Wallops Flight Facility  
Wallops Island, Virginia 22337



| DATE | BY | REVISIONS | CR | AP | PROJECT ENGINEER | DATE | REVISIONS | CR | AP | PROJECT ENGINEER | DATE | REVISIONS | CR | AP | PROJECT ENGINEER |
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| DATE | BY | REVISIONS | CR | AP | PROJECT ENGINEER | DATE | REVISIONS | CR | AP | PROJECT ENGINEER | DATE | REVISIONS | CR | AP | PROJECT ENGINEER |
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**NORTH ISLAND ELECTRICAL UPGRADE**  
**PRIMARY AND SECONDARY CABLE PLAN**  
PROJECT NUMBER: 16897-01  
DATE: 12-01-2012  
DRAWING NO. 16897

MATCH LINE PE-16



1616 E. Millbrook Rd, Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5939

**CONSTRUCTION NOTES:**

1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE PROCEDURES WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION.
2. CONTRACTOR SHALL NOTIFY COTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATES. IF ANY NEW WORK IS IN CONFLICT WITH EXISTING INFRASTRUCTURE NOTIFY THE COTR IMMEDIATELY.
3. SEE ELECTRIC CONDUIT PLAN SHEET PCOF FOR CONDUIT SIZE.
4. FIBER OPTIC CABLE TO BE INSTALLED ONE PER CONDUIT (TYPICAL).
5. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET UD-7.

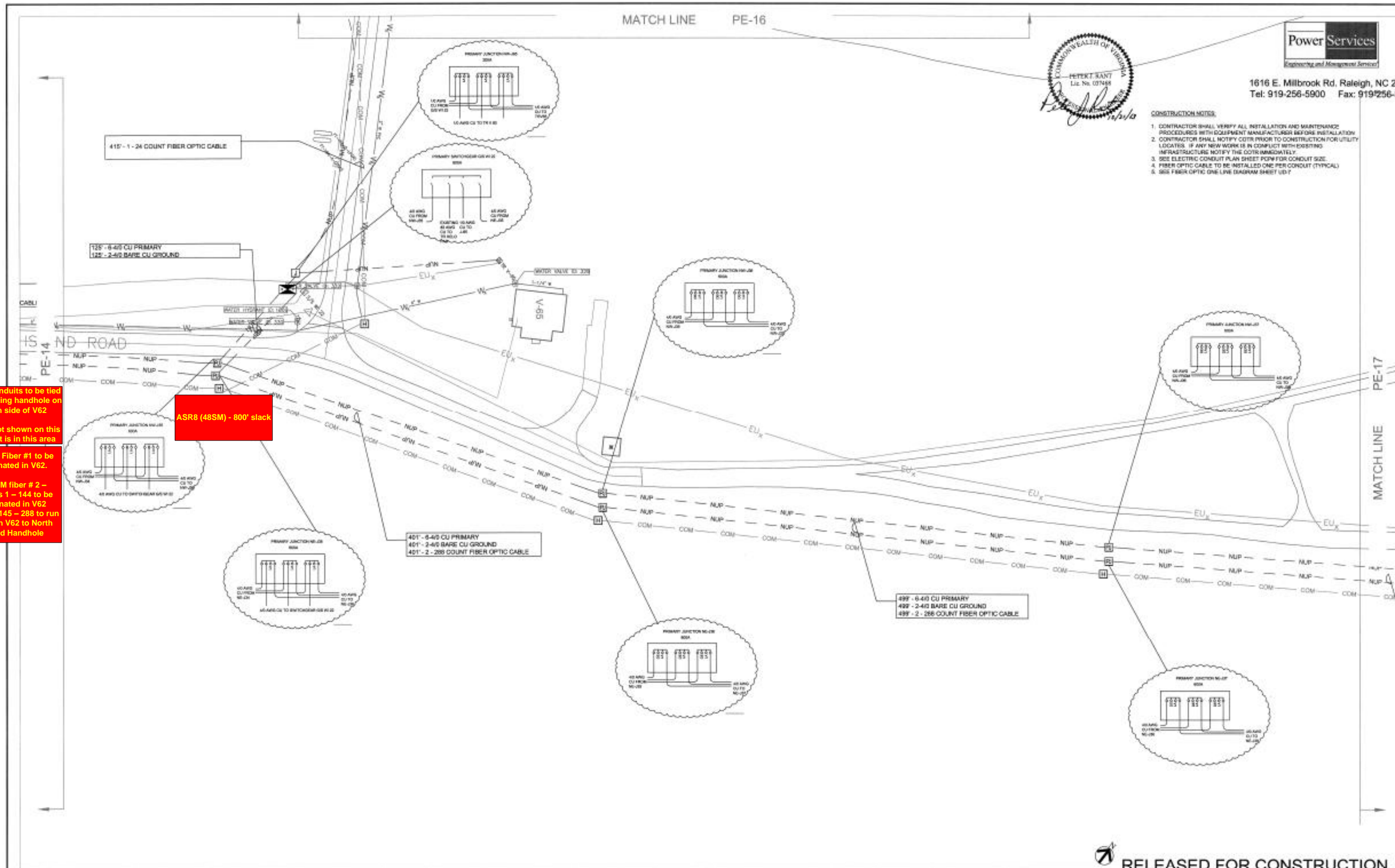
2 - 4" Conduits to be tied into existing handhole on south side of V62

V62 is not shown on this map but is in this area

288 SM Fiber #1 to be terminated in V62.

288 SM fiber #2 - Strands 1 - 144 to be terminated in V62. Strands 145 - 288 to run through V62 to North Island Handhole

ASR8 (48SM) - 800' slack



RELEASED FOR CONSTRUCTION

PE-15

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
OSCAR SPACE FLIGHT CENTER  
Wallops Flight Facility  
Wallops Island, Virginia 23337



| DATE | LET | REVISIONS | OK | AP |
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| PROJECT ENGINEER | DATE |
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|                  |      |
| SUBMITTED BY     | DATE |
|                  |      |
| PROJECT MANAGER  | DATE |
|                  |      |

| AREA SAFETY    | DATE |
|----------------|------|
|                |      |
| PRE PROTECTION | DATE |
|                |      |

| CONSTRUCTION MANAGER | DATE |
|----------------------|------|
|                      |      |
| D & M                | DATE |
|                      |      |

| CREATING APPROVAL     | DATE |
|-----------------------|------|
|                       |      |
| CHECKING GROUP LEADER | DATE |
|                       |      |
| BRANCH APPROVAL       | DATE |
|                       |      |
| ISSUED (S&C)          | DATE |
|                       |      |

| GRAPHIC SCALE  |
|--|
| 1" = 40'   |
| 1" = 80'   |
| 1" = 160'  |
| 1" = 320'  |
| 1" = 640'  |
| 1" = 1280'   |
| 1" = 2560'   |
| 1" = 5120'   |
| 1" = 10240'  |
| 1" = 20480'  |
| 1" = 40960'  |
| 1" = 81920'  |
| 1" = 163840'   |
| 1" = 327680'   |
| 1" = 655360'   |
| 1" = 1310720'  |
| 1" = 2621440'  |
| 1" = 5242880'  |
| 1" = 10485760'   |
| 1" = 20971520'   |
| 1" = 41943040'   |
| 1" = 83886080'   |
| 1" = 167772160'  |
| 1" = 335544320'  |
| 1" = 671088640'  |
| 1" = 1342177280'   |
| 1" = 2684354560'   |
| 1" = 5368709120'   |
| 1" = 10737418240'  |
| 1" = 21474836480'  |
| 1" = 42949672960'  |
| 1" = 85899345920'  |
| 1" = 171798691840'   |
| 1" = 343597383680'   |
| 1" = 687194767360'   |
| 1" = 1374389534720'  |
| 1" = 2748779069440'  |
| 1" = 5497558138880'  |
| 1" = 10995116277760'   |
| 1" = 21990232555520'   |
| 1" = 43980465111040'   |
| 1" = 87960930222080'   |
| 1" = 175921860444160'  |
| 1" = 351843720888320'  |
| 1" = 703687441776640'  |
| 1" = 1407374883553280'   |
| 1" = 2814749767106560'   |
| 1" = 5629499534213120'   |
| 1" = 11258999068426240'  |
| 1" = 22517998136852480'  |
| 1" = 45035996273704960'  |
| 1" = 90071992547409920'  |
| 1" = 180143985094819840'   |
| 1" = 360287970189639680'   |
| 1" = 720575940379279360'   |
| 1" = 1441151880758558720'  |
| 1" = 2882303761517117440'  |
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| 1" = 11529215046068469760'   |
| 1" = 23058430092136939520'   |
| 1" = 46116860184273879040'   |
| 1" = 92233720368547758080'   |
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| 1" = 1475739525896764129280'   |
| 1" = 2951479051793528258560'   |
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| 1" = 755578637259143234191360'   |
| 1" = 1511157274518286468382720'  |
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| 1" = 6044629098073145873530880'  |
| 1" = 12089258196146291747061760'   |
| 1" = 24178516392292583494123520'   |
| 1" = 48357032784585166988247040'   |
| 1" = 96714065569170333976494080'   |
| 1" = 193428131138340667952988160'  |
| 1" = 386856262276681335905976320'  |
| 1" = 773712524553362671811952640'  |
| 1" = 1547425049106725343623905280'                                       |
| 1" = 3094850098213450687247810560'                                       |
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| 1" = 12379400392853802748991242240'                                      |
| 1" = 24758800785707605497982484480'                                      |
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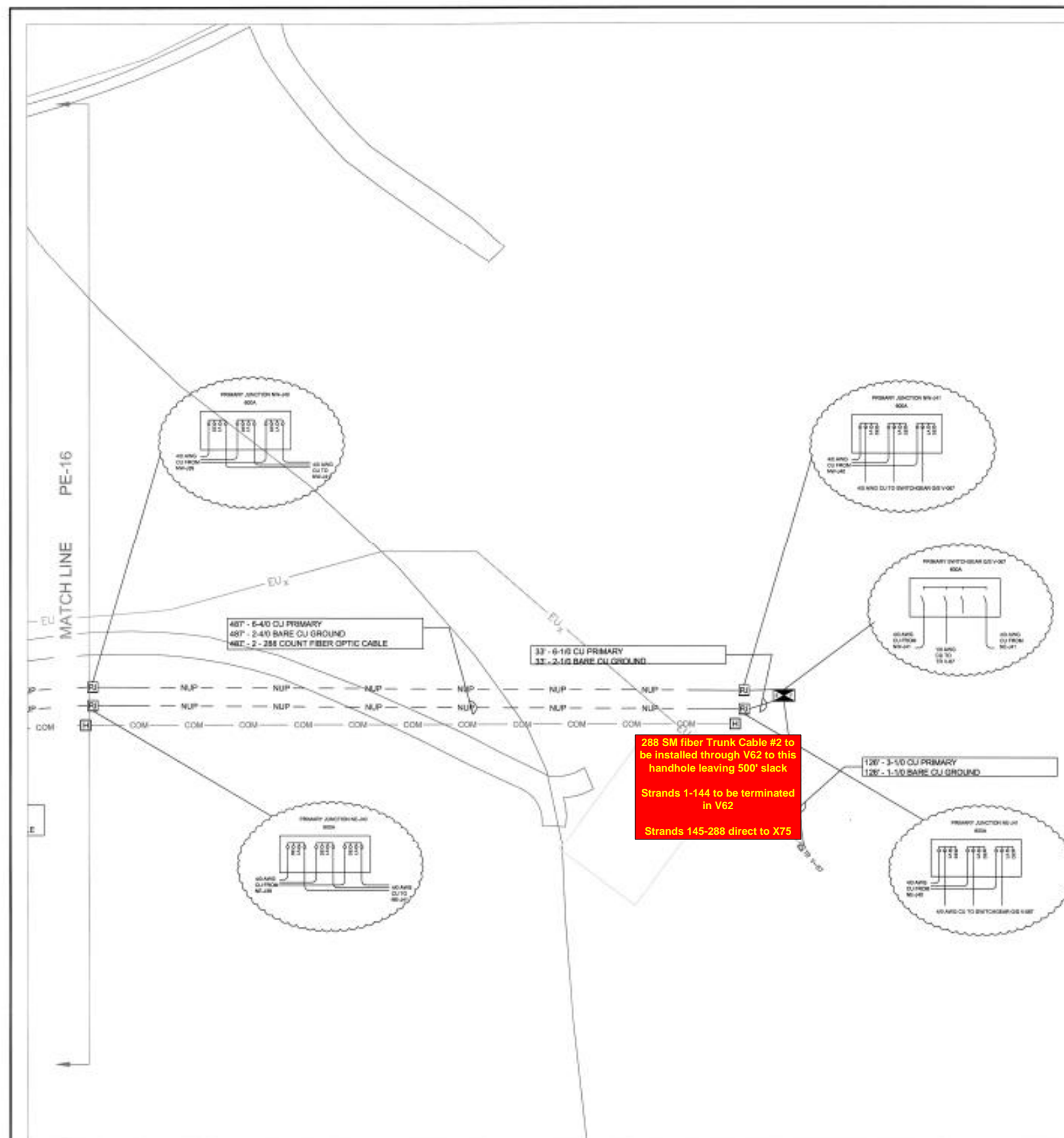




1616 E. Millbrook Rd. Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5939

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE PROCEDURES WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION
2. CONTRACTOR SHALL NOTIFY COTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATES. IF ANY NEW WORK IS IN CONFLICT WITH EXISTING INFRASTRUCTURE NOTIFY THE COTR IMMEDIATELY.
3. SEE ELECTRIC CONDUIT PLAN SHEET FOR CONDUIT SIZE.
4. FIBER OPTIC CABLE P. TO BE NOTED: 1 FIBER OPTIC CABLE (TYPICAL)
5. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET V0-7



RELEASED FOR CONSTRUCTION

PE-18

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
STANLEY SPACE FLIGHT CENTER  
Wallops Flight Facility  
Wallops Island, Virginia 22357



| DATE | REV | REVISIONS |
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| PROJECT ENGINEER | DATE |
| SUBMITTED BY     | DATE |
| PROJECT MANAGER  | DATE |

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|-----------------|------|
| NASA SAFETY     | DATE |
| FIRE PROTECTION | DATE |

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| CONTRACTOR MANAGEMENT | DATE |
| U & M                 | DATE |

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| ENGINEERING APPROVAL   | DATE |
| ENGINEERING SUPERVISOR | DATE |
| BRANCH APPROVAL        | DATE |
| RESEARCH ROOM          | DATE |

|                        |                   |
|------------------------|-------------------|
| GRAPHIC SCALE          | 1"=40'            |
| AUTOCAD - RELEASE 2007 | FILE NAME: 092003 |
| DATE: 12/31/18         | BY: JPR           |

|   |                      |
|---|----------------------|
| NORTH ISLAND ELECTRICAL UPGRADE<br>PRIMARY AND SECONDARY CABLE PLAN | DRAWING NO.<br>16902 |
|---|----------------------|



1616 E. Millbrook Rd. Raleigh, NC 27609  
Tel: 919-256-5900 Fax: 919-256-5938

**CONSTRUCTION NOTES:**

1. CONTRACTOR SHALL VERIFY ALL INSTALLATION AND MAINTENANCE PROCEDURES WITH EQUIPMENT MANUFACTURER BEFORE INSTALLATION.
2. CONTRACTOR SHALL NOTIFY COTR PRIOR TO CONSTRUCTION FOR UTILITY LOCATED. IF ANY NEW WORK IS IN CONFLICT WITH EXISTING INFRASTRUCTURE, NOTIFY THE COTR IMMEDIATELY.
3. SEE ELECTRICAL CONDUIT PLAN SHEET FOR CONDUIT SIZES.
4. FIBER OPTIC CABLE TO BE INSTALLED ONE PER CONDUIT (TYPICAL).
5. SEE FIBER OPTIC ONE LINE DIAGRAM SHEET 1617.

V80 (24SM) - 200' slack

415' - 1 - 24 COUNT FIBER OPTIC CABLE

125' - 8-48 CU PRIMARY  
125' - 2-48 BARE CU GROUND

ARMY  
U GROUND  
FIBER OPTIC CABLE

ISLAND ROAD

2 - 4" Conduits to be tied  
into existing handhole on  
south side of V62

V62 is not shown on this  
map but is in this area

288 SM Fiber #1 to be  
terminated in V62.

288 SM fiber #2 -  
Strands 1 - 144 to be  
terminated in V62.  
Strands 145 - 288 to run  
through V62 to North  
Island Handhole

RELEASED FOR CONSTRUCTION

PE-16

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
RESEARCH SPACE FLIGHT CENTER  
Wallops Flight Facility  
Wallops Island, Virginia 22337



| DATE | BY | REVISION | DESCRIPTION |
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| DESIGNED BY | DATE | CHECKED BY | DATE |
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| CONSTRUCTION SCHEDULE | DATE | CONSTRUCTION APPROVAL | DATE |
|                       |      |                       |      |
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| PROJECT NUMBER | DATE | PROJECT NAME | DATE |
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